

ROCKY FLATS PLANT
JEFFERSON COUNTY COLORADO
REMEDIAL OVERSIGHT SUPPORT

TECHNICAL REVIEW COMMENTS
PROPOSED INTERIM MEASURE/INTERIM REMEDIAL ACTION
DECISION DOCUMENT FOR THE SOLAR EVAPORATION PONDS
OPERABLE UNIT 4

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 8 Federal Facilities Remedial Branch
Denver, Colorado

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ADMIN RECORD

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) requested PRC Environmental Management, Inc. (PRC) review and comment on the Rocky Flats Plant (RFP) Proposed Interim Measure/Interim Remedial Action Decision Document for the Solar Evaporation Ponds, Operable Unit 4 (OU4). Specifically, this involved review and comment on the plans to accelerate the evaporation and treatment of the water residing in the solar ponds and the water which is intercepted in the french drain system down gradient of the ponds. PRC conducted this review and provided comments under work assignment number C08057 of the Technical Enforcement Support (TES) 12 contract number 68-W9-0009.

This review was requested on October 2, 1991 and was to be completed by October 30, 1991. Special attention was to be given to (1) the format and contents of the document; (2) the design of the proposed evaporators and of the leachate storage tanks; and (3) the applicable or relevant and appropriate requirements (ARARs) process development.

PRC has provided both general and specific comments on the document.

2.0 GENERAL COMMENTS

The process flow of contaminated water downstream of the solar ponds through the flash evaporators is concise and well explained. This also applies to the description of the proposed physical layout in building 910 where the flash evaporators and associated equipment and facilities are proposed to be located.

Characterization of the solar pond water is inadequate and needs to be more clearly presented. The report should present a complete chemical analysis of both the solar pond water, using the most recent characterization which is referenced on page 2-18 but is not included, and the french drain water. This analysis should determine whether either source of water is a Resource Conservation and Recovery Act (RCRA)-regulated hazardous waste.

Several applicable RCRA regulations regarding the handling and storage of hazardous wastes have not been addressed in this decision document, other than being listed as ARARs. For instance, 40 CFR 264 Subpart J requires that structural elements for tanks (such as closed tops, leak detection, and secondary containment), tank assessments, operations and maintenance plans, and response plans for the handling of accidental releases must be addressed before the tanks are put into use.

A schedule of deliverables should be provided outlining the project strategy, including a design schedule, startup schedule and plan, health and safety plan, sampling plan, operations and maintenance plan, and a quality assurance and quality control (QA/QC) plan.

3.0 SPECIFIC COMMENTS

1. Page 3-1, Section 3.1 Description of Selected Remedy. The re-use criteria that the distillate will be required to meet should be given.

Rationale: To be complete, treatment objectives should be listed in the report if they are referenced.

2. Page 3-7, Figure 3-3. There is a filter and strainer downstream of the solar ponds which is shown on the conceptual flow diagram and discussed on page 3-6. The disposal of the spent filters or of the particulate caught in the strainer is not mentioned. This should be discussed.

Rationale: The spent filters and the particulate from the strainer will likely be highly concentrated with contaminants and may potentially be classified as a hazardous waste. Whether the disposal of these wastes will take place on-site or off-site, several ARARs would be applicable. For instance, the ARARs listed on page 4-23 and 4-26 could all potentially be applicable for treatment, hazardous waste generation, hazardous waste transportation, and off-site treatment storage, or disposal. If the report does not indicate how these wastes are disposed of, compliance cannot be checked.

3. Page 3-9, Section 3.1.1.3, Sampling and Analytical Schedule Part a. The report discusses detailed characterization of the water and the parameters sampled as "... a union of the parameters obtained during the monthly sampling of the Building 374 evaporation distillate and the sampling of water discharged from the plant." However, this final parameter list is not provided in the report. The list should be part of this report.

Rationale: The report should stand on its own. The reader should not be required to research to determine the parameters that were sampled.

4. Page 3-10, Section 3.1.1.3, Sampling and Analytical Schedule Part d. Monthly water samples are to be taken from the 500,000-gallon distillate surge tank. Sampling should be done more frequently, especially during system startup when the reliability of the flash evaporators may be in question.

Rationale: It is normal for plants to experience periods of upset when they are first brought into operation. A period of upset could go undetected if samples are collected only once a month.

5. Page 3-10, Section 3.1.1.3, Sampling and Analytical Schedule Part d. The report discusses the continuous sampling of distillate from the water tank for "a limited number of parameters (e.g. pH and nitrates)." The entire list of measured parameters should be provided.

Rationale: The appropriateness of a sampling system that is not described in detail cannot be determined.

6. Page 3-11, Table 3.1, Process Sampling Plan. The analysis plan referenced in Table 3 remains unsubmitted.

Rationale: The appropriateness of a sampling plan that is not described in detail cannot be determined.

7. Page 3-16, Figure 3.5, Typical Tank Construction. The storage tanks proposed for the french drain water should meet the design requirements under RCRA for containing a hazardous waste. French drain water is most likely to be considered to be a RCRA regulated hazardous waste.

Rationale: The determination has not been made on whether the french drain water is a RCRA-regulated hazardous waste. Depending on the results of this evaluation, it may be necessary to design the french drain water storage tanks to meet regulations. These requirements would include closed tops, proper secondary containment, and a leak detection system. The present design has only the leak detection system.

8. Page (unknown but possibly 17a), Figure 3-5, Typical Sump Construction. The discharge method to be used from the sump should be clarified.

Rationale: It is unclear what will happen to leakage from the tank after it reaches the sump. Since the french drain water may be a RCRA-regulated waste, it is important to know how leakage is removed from the sump and how it is disposed of.

9. Page 3.15-3.1.2.1, Location of Tanks, first paragraph, and Page 3-20 - 3.1.3.7, Closure of IM/IRA Structural Components. The report should explain why the tanks will only be used until 1995.

Rationale: The document provides no explanation concerning the way french drain water will be treated after 1995. Temporary solutions often become permanent solutions, especially if there is no clear plan to do otherwise. As long as the design of the storage tanks does not meet RCRA regulations this would be an unacceptable possibility.

10. General - Concentrations of Contaminants of the Solar Ponds. The report should provide a accurate and consistent presentation of concentration of contaminants in the solar ponds.

Rationale: On page 3-8, the discussion of process performance, feed water is described as having an average total dissolved solid (TDS) concentration of 5,000 ppm. On page 3-18,

when discussing treatability, the referenced feed supply is described as having a concentration of 10,000 ppm (pond average). On page 2-19, the TDS concentration in pond 207-A is given as 127,000 ppm. On page 4-17, the average TDS of water from the interceptor trench system is given as 4,560 mg/L. It is not clear if these variances are due to inconsistencies in the data or to different operating parameters. If it is due to different operating parameters, the report should show that the flash evaporators will handle such a wide variation.

11. Page 3-19, 3.1.3.4 Management Waste, Second Paragraph. The regulation Title 6 CCR Section 100 7-3 Part 261.2 (e)(ii) should be included in the report in the ARARs section.

Rationale: If the regulation does allow for an exclusion, it may require a significant change in the handling of distillate water.

12. Page 3-20 - 3.1.3.6 Assumptions, Uncertainties, and Contingencies, Second Paragraph.

Water percolating back into the ground water system is not a reasonable control measure if the temporary tanks holding french drain water fail, particularly if the french drain water is a RCRA-regulated waste.

Rationale: The water from the tanks would percolate into the water table downgradient from the french drain. There is no containment method for ground water contamination downgradient of the french drain.

13. Page 3-27, 3.2.5 - Short Term Effectiveness, Second Paragraph. The schedule for the development of standard operating procedures for the evaporation process should be further clarified.

Rationale: Unless there are discrete deadlines for the development of standard operating procedures, they may be left undone. This schedule should state when the procedures will be developed and by whom.

14. Page 3-27, 3.2.5 - Short Term Effectiveness, Second Paragraph. The report should be more specific regarding the applicable procedures concerning personal protective equipment.

Rationale: Applicable procedures should be provided in the health and safety plan. The schedule for the development of the health and safety plan should be referenced in the decision document.

15. Page 4-10, 4.5, Performance Design, or Other Action Specific Requirements. The text states that solar pond sludges and precipitate from the Building 910 flash evaporators will be treated under pondcrete operations. The text further states that RCRA land disposal restrictions (LDRs) are not relevant and appropriate to the scope of this IM/IRA. The decision document should be revised to clarify that although treated (stabilized/solidified) sludges and precipitate generated during the IM/IRA will be subject to RCRA LDRs, these requirements are not being considered because pondcrete operations (including disposal) are not within the scope of this IM/IRA.

Rationale: As currently presented, the text implies that LDRs are not relevant and appropriate to the sludges and precipitate generated during the IM/IRA. However, these wastes are subject to LDRs.

16. Page 4-28, National Ambient Air Quality. The applicability of the national ambient air quality standards and other provisions in the 1990 amendments to the Clean Air Act to open tank emissions should be considered.

Rationale: Although the enforcement of the 1990 Amendments to the Clean Air Act is not clear, there are some elements which may constrain the plan to not have a top on the french drain water storage tanks. One of the provisions of the act is to include an initial list of hazardous air pollutants. Analytes which are on this list and in Table 2.2 (Summary of Selected Analytical Data, Interceptor Trench System Water) include BIS (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, methylene chloride, pentachlorophenol, and radionuclides.